chemistry appear to be able to overcome at the university such early disadvantages; and we learn that as a result "most manufacturers have a high respect for the advantages afforded by scientific education," and are "ready to receive the young graduate with open cordiality." The lot of the young chemist seems, indeed, to be a particularly happy one in the States in view of the "unprecedented demand for good men." Statistics show that the average salary of the graduates in chemistry of five years' standing from the Case School of Applied Science is about 3000 dollars per annum. At all colleges "there is a far greater demand for graduates than can be supplied." A powerful aid to research has recently arisen in the immense funds devoted by many individuals to this purpose; amongst these the Carnegie foundation for the retirement of teachers is mentioned, "as it relieves the teacher during his earlier years from the anxiety of later need and gives him courage to devote his residual energy in some efforts for the advancement of knowledge."

WE have received a copy (printed for private circulation) of the Friday evening discourse delivered by Prof. A. H. Church at the Royal Institution on April 12 on the "Conservation of Urban Stone-work and Wall-paintings." The most active among the agents tending to destroy the stone-work of buildings of historical interest in large towns is undoubtedly the sulphuric acid produced by the combustion of coal used as fuel. It has been estimated that at least half a million tons of sulphuric acid are formed annually in London in this way. Rain charged with the acid gradually converts the surface of the limestone of public buildings (such, for instance, as St. Paul's Cathedral) into gypsum, the increase of volume accompanying the change being responsible, moreover, for a greater or less degree of disintegration of the more delicate mouldings and tracery. An account is given by Prof. Church of the remedial treatment adopted in such cases, based on the use of a solution of baryta, which has the property of re-cementing together the particles of the decayed stone-work. The baryta acts by forming an insoluble sulphate with the gypsum and liberating lime, which, under the influence of carbonic acid from the air, regenerates the original binding cement of the stone. This treatment is applicable, not only to limestones, but also to sandstones which were originally compacted by a calcareous cement. The success attending its use is well illustrated by the experience obtained in the case of the Chapter House at Westminster. "Before treatment a touch of the finger sufficed to bring away the surface of the carving, afterwards the stone was as sound as that newly quarried and harder." To render the stone subsequently resistant to the action of acids it may be covered with a suitable waterproofing coating of paraffin wax. The conservation of mural paintings or frescoes needs in each special case, according to its character, a different process. A number of typical cases of treatment are described.

AN interesting article on the life and work of Linnæus, by Mr. G. W. Murdoch, appeared in the *Newcastle Daily Journal* of May 23. We congratulate that journal upon being one of the few daily papers to publish a special article upon Linnæus on the 200th anniversary of his birth.

THE *Brazilian Engineering and Mining Review*, which has now reached its fourth annual volume, is a high-class monthly technical journal published in English at Rio de Janeiro. Looking through some back numbers recently sent to us, we notice many articles of permanent value regarding the mineral resources of Brazil, and, continued from number to number, a very important bibliography of the geology and palæontology of Brazil compiled by Prof. John C. Branner.

SEVERAL plates of illustrations of the zoology of the Royal Indian Marine Survey ship *Investigator* have been received from the Indian Museum. The illustrations include Crustacea (Malacostraca and Entomostraca) and Mollusca, and have been prepared under the direction of Dr. A. Alcock, F.R.S., Dr. N. Annandale, and Mr. A. C. MacGilchrist.

A "HANDY Guide to Photographic Requisites," which is a conveniently arranged price list of photographic apparatus, materials, and pure chemicals, has been published by Messrs. Reynolds and Branson, Ltd., of Leeds.

THE much-discussed question of the structure of cyanic acid forms the subject of a communication by F. Carlo Palazzo and E. Carapelle in the *Gazzetta* (vol. xxxvii., ii., p. 184). It is pointed out that, while Nef's experiments have shown that esters of the structure OR.C:N derived from normal cyanic acid do not exist, he still adheres illogically to the view that the free acid and its alkali salts are of the normal constitution. The argument that Nef advanced, that the free *iso*-acid, CO : NH, would be unstable in presence of water and undergo change into the normal acid, should, on his own showing, from the great power of addition possessed by the group .C N, be reversed. Cyanic acid when esterified at so low a temperature as $-5°$, by means of diazomethane or diazoethane, gives esters of the *iso*-type CO : NR alone. In view of the fact that the somewhat analogous α-pyridone gives only oxygen esters under similar conditions, and of the probability that isomeric change is excluded at so low a temperature, it is concluded that the free acid and its salts have the iso-structure. The same conclusion was also recently arrived at by Chattaway and Wadmore using a less direct argument.

OUR ASTRONOMICAL COLUMN.

ASTRONOMICAL OCCURRENCES IN JUNE:—

June 1. Mars. Apparent Diameter = 17″·6.
9. 1h. Vesta in conjunction with Moon. Vesta 0° 11′ N.
10. 23h. 37m. Mercury in conjunction with ε Geminorum (mag. 3·2). Distance between centre of planet and star about 25′.
12. 14h. Mercury in conjunction with Neptune. Mercury 2° 51′ N.
15. 8h. Mercury in conjunction with Jupiter. Mercury 1° 41′ N.
18. 10h. 46m. Minimum of Algol (β Persei).
19. Uranus ½° S. of υ² Sagittarii (mag. 5·2).
22. 2h. Sun enters Cancer, Summer commences.
23. Uranus ½° S. of υ¹ Sagittarii (mag. 5·0).
24. 11h. 40m. to 12h. 48m. Moon occults ξ Ophiuchi (mag. 4·5).
26. Mercury at greatest elongation (25° 28′ E).

MAGNITUDES OF MIRA, DECEMBER 14, 1906, TO FEBRUARY 16, 1907.—The results of a number of naked-eye observations of Mira, made at the Radcliffe Observatory during the recent maximum brightness of this star, are published in the Monthly Notices (R.A.S.) for April (vol. lxvii., No. 6, p. 412), together with some notes on the star's colour.

The greatest magnitude, 2·06, during the period of observation was recorded on December 27, when Mr. Robinson found the colour of Mira to be similar to that of α Arietis, *i.e.* yellow. Examined with the Barclay equatorial on January 11, the image of Mira showed red

spiculæ around the margin, but the margin was not so broad, nor so deep a red, as that seen by the same observers around Nova Persei in 1901. The image was, however, quite distinct in appearance from those of two other coloured stars, α Ceti and Aldebaran, when the same optical means were employed.

THE INTERNATIONAL EROS CAMPAIGN.—After suffering numerous delays, Circular No. 12 of the International Astrographic Conference of July, 1900, has just been published by the French Academy of Sciences. It contains the results of some thousands of visual and photographic observations of the position of Eros during the favourable opposition of 1900–1, made at eleven different observatories. The plates taken at the Upsala Observatory, and part of those taken at Minneapolis, have been reduced at the Paris Observatory, and, in order not to delay the publication of the collected results any longer, the work of the Algiers Observatory is omitted from the present Circular, to be published when ready by the Algiers authorities themselves. A collection of all the important documents relating to the orbit of Eros is included in the present publication.

MARS.—At the coming opposition, which will take place on July 6, the planet's southern hemisphere will be presented, and the apparent diameter will be 22″.8, but, owing to the large southerly declination, the altitude of the planet as seen from Greenwich will be only 10°, therefore the observing conditions will be very poor.

CATALOGUE OF VARIABLE STARS.—The second Harvard catalogue of variable stars, compiled by Miss Cannon, appears as vol. lv., part i., of the Annals of the Astronomical Observatory of Harvard College. It contains all the known particulars of 1957 variable stars, and includes those found in globular clusters, but not those discovered in the Magellanic clouds. The latter number 1791, so that altogether there are now 3748 known variable stars, 2909 of which have been discovered at Harvard.

In addition to the tabulated data for each star, the present catalogue contains a valuable set of notes giving further particulars of numerous individual stars and a brief review of all previous catalogues which have appeared since Argelander published the first, including eighteen variables, in 1844.

ABBREVIATIONS FOR THE NAMES OF STAR CATALOGUES.—No. 4176 (May 14) of the *Astronomische Nachrichten* contains a useful list of abbreviations for star catalogues. The names of the numerous catalogues, to which frequent references are essential, are often lengthy, and different writers use different abbreviations. To obviate the consequent confusion, Dr. A. Auwers has compiled the present list, which includes all the important catalogues from Baily's Flamsteed catalogue (abbreviated to B.Fl.) of 1690 up to the Greenwich second nine-year catalogue ($9y_2$) of 1900.

THE NATAL OBSERVATORY.—The report of the Government astronomer of Natal, for the year 1906, is chiefly devoted to the publication of the meteorological results secured at various stations, as in previous years. Observations of the magnetic elements and the distribution of time signals were carried on as usual, and a number of observations of comet 1905*c* were made with the large equatorial telescope by Mr. Rendell, who, early this year, resigned the position of chief assistant to which he was appointed in March, 1903.

ANNIVERSARY MEETING OF THE LINNEAN SOCIETY.

THE Linnean Society of London, which may be said to have a preeminent position amongst the Linnean societies of the world as the faithful custodian of Linnæus's own library, manuscripts, herbarium, and other collections, along with many personal relics, holds annually its business meeting for the election of officers and the reception of the president's address on May 24, the reputed birthday of Linnæus.

In his presidential address at the meeting on Friday last, Prof. W. A. Herdman dealt with the special circumstances of this year, when the celebration of the 200th birthday of the illustrious Swede has been made the occasion of congratulatory meetings in Sweden and elsewhere throughout the civilised world wherever natural science is cultivated and the debt of the naturalist to Linnæus is gratefully acknowledged.

The Linnean Society has sent to Upsala and Stockholm as its representative on the occasion Mr. William Carruthers, F.R.S., a past-president who has made a special study of the work and the personal history and relics of Linnæus.

Mr. Carruthers, accompanied by the general secretary of the society, is now in Sweden, bearing to the ancient University of Upsala the society's Linnean gold medal, specially struck for the occasion, and conveying both to the University and to the Royal Academy of Sciences at Stockholm congratulatory documents, signed by the president and secretaries, and bearing the seal of the society.

At the conclusion of the section of his address dealing with the Linnean celebrations, the president moved that a telegram in the following terms be sent to the Rector Magnificus of the University of Upsala:—"Linnean Society of London assembled at anniversary meeting congratulates University of Upsala on historic Linnean celebration." The proposal was received with acclamation, and the telegram was dispatched forthwith from the meeting.

In further celebration of the occasion the Linnean Society proposes to hold a social gathering of the fellows and their friends, at the society's rooms in Burlington House, on the evening of June 7, when the society's Linnean relics will be on exhibition, and several short addresses on interesting recent discoveries in natural history will be given by fellows of the society.

THE JUBILEE OF THE SOCIÉTÉ CHIMIQUE DE FRANCE.

A NUMBER of scientific men from all parts of Europe met in Paris on May 16 and the two following days to celebrate the fiftieth anniversary of the Société chimique de France. Founded by a few students for mutual instruction, the society is better known as the Société chimique de Paris, a change in name having taken place a short time ago. British chemists were well represented; Sir W. Ramsay and Dr. H. Brown came on behalf of the Chemical Society; Drs. Markel and Lewkowitsch and Mr. Walter F. Reid for the Society of Chemical Industry. Sir W. Perkin, Prof. Armstrong, and Mr. C. E. Groves were also present.

The proceedings commenced on May 16 in the amphitheatre of the École supérieure de Pharmacie in the Avenue de l'Observatoire. The chair was occupied by M. Bouveault, president of the Société chimique de France, who was supported by M. Reynal, representing the French Government. The president welcomed the guests in a short speech, after which Dr. Graebe, who, with Dr. Liebermann and Dr. von Martius, represented the Deutsche Chemische Gesellschaft, read a somewhat lengthy address in German, and made a short speech in French which was well received. A second German address was presented by Dr. von Martius on behalf of the Verein Deutscher Chemiker, after which Prof. Piutti, of Naples, made a sympathetic speech in Italian which was much applauded. Senator Paternó, also a polished orator, was to have represented Italian chemists, but was detained in Russia on a tariff mission. Sir William Ramsay next read and presented the address of the Chemical Society, saying at the same time a few appropriate words in French. Mr. Walter F. Reid then made a short French speech, and presented the congratulatory address of the Society of Chemical Industry. Other speakers followed representing Russia, Norway, Switzerland, and other countries, after which M. Reynal, representing the French Government, welcomed the foreign delegates and referred to the numerous services rendered to the State by chemists, especially in connection with hygiene, agriculture, and the detection of adulteration and of crime generally.

In the afternoon a special boat conveyed the delegates and many members of the French society to Sèvres, where